



Quadratic Graphs

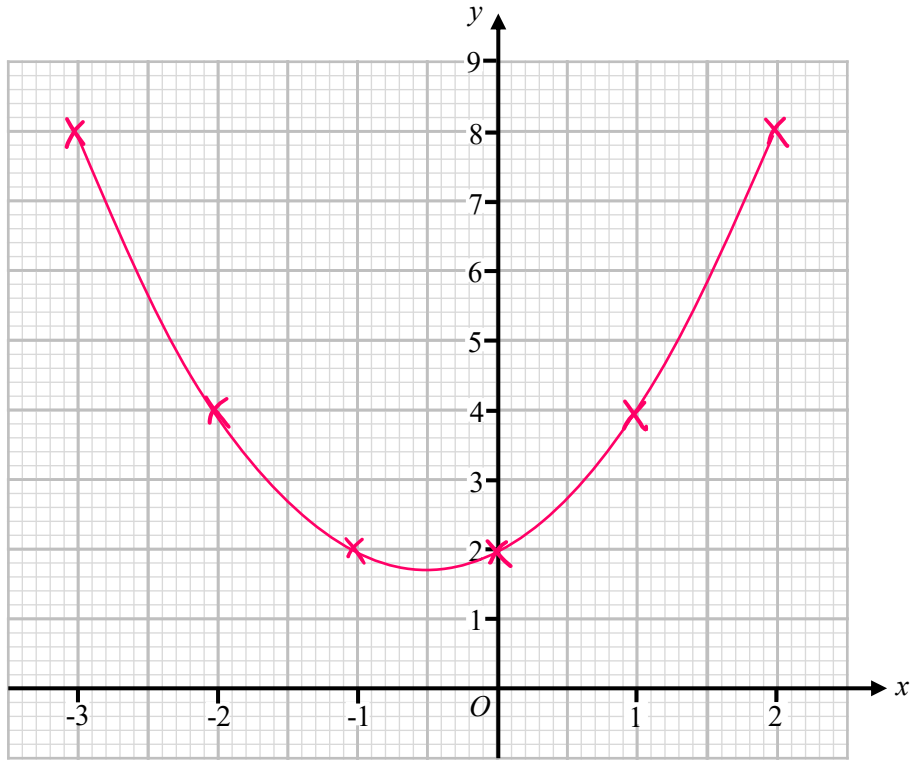
← REVISE THIS TOPIC

1 (a) Complete the table of values for $y = x^2 + x + 2$

x	-3	-2	-1	0	1	2
y	8	4	2	2	4	8

(2)

(b) On the grid, draw the graph of $y = x^2 + x + 2$ for values of x from -3 to 2



(2)



(Total for Question 1 is 4 marks)

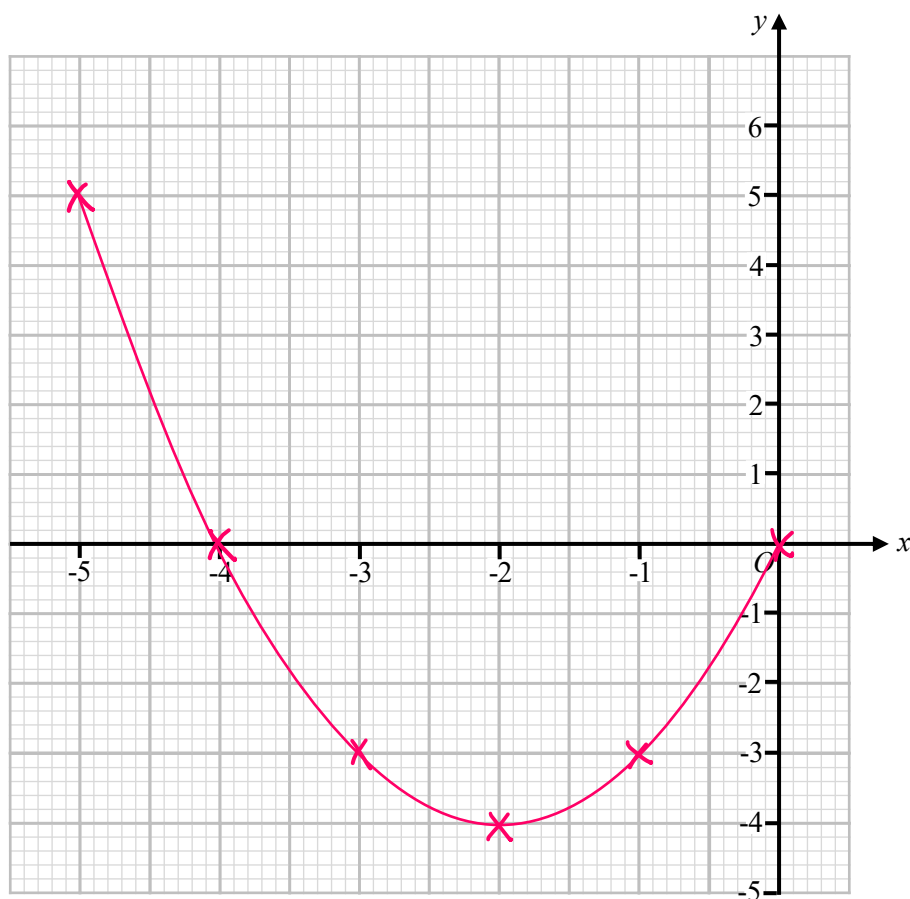
1

2 (a) Complete the table of values for $y = x^2 + 4x$

x	-5	-4	-3	-2	-1	0
y	5	0	-3	-4	-3	0

(2)

(b) On the grid, draw the graph of $y = x^2 + 4x$ for values of x from to -5 to 0



(2)



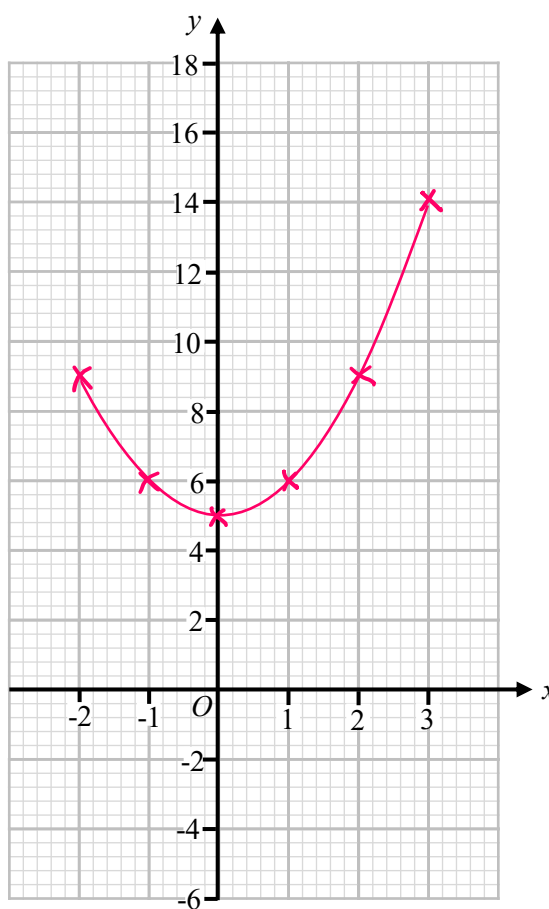
(Total for Question 2 is 4 marks)

3 (a) Complete the table of values for $y = x^2 + 5$

x	-2	-1	0	1	2	3
y	9	6	5	6	9	14

(2)

(b) On the grid, draw the graph of $y = x^2 + 5$ for values of x from -2 to 3



(2)



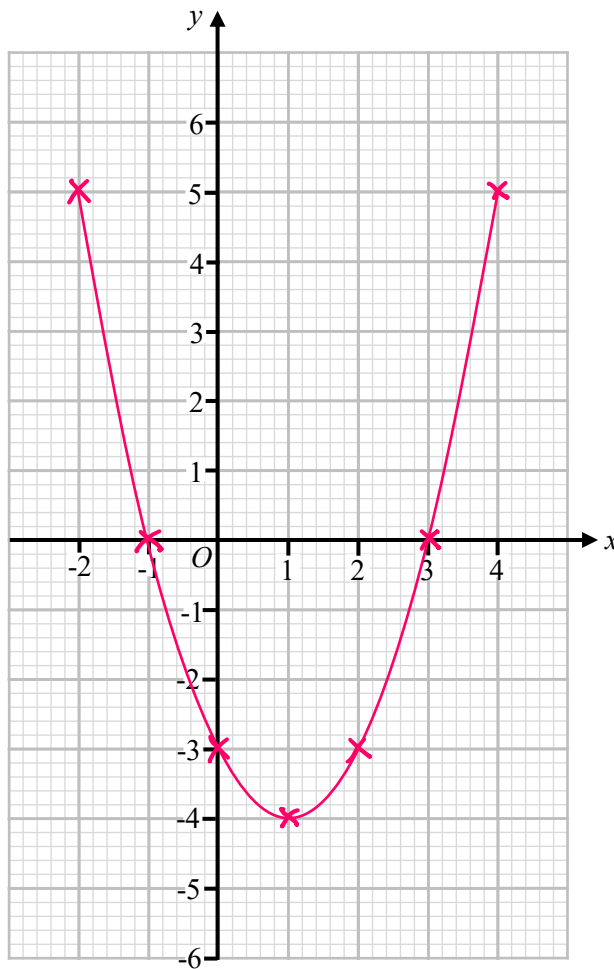
(Total for Question 3 is 4 marks)

4 (a) Complete the table of values for $y = x^2 - 2x - 3$

x	-2	-1	0	1	2	3	4
y	5	0	-3	-4	-3	0	5

(2)

(b) On the grid, draw the graph of $y = x^2 - 2x - 3$ for values of x from -2 to 4



(2)



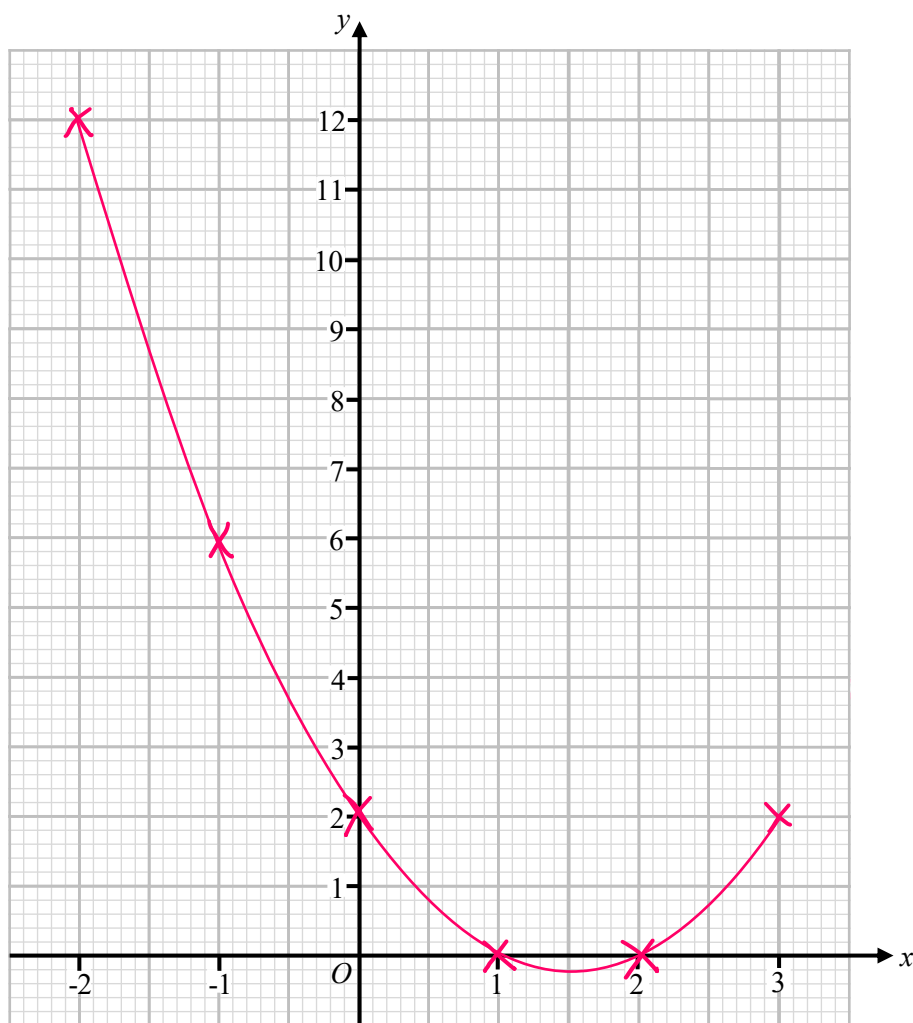
(Total for Question 4 is 4 marks)

5 (a) Complete the table of values for $y = x^2 - 3x + 2$

x	-2	-1	0	1	2	3
y	12	6	2	0	0	2

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x + 2$ for values of x from -2 to 3



(2)



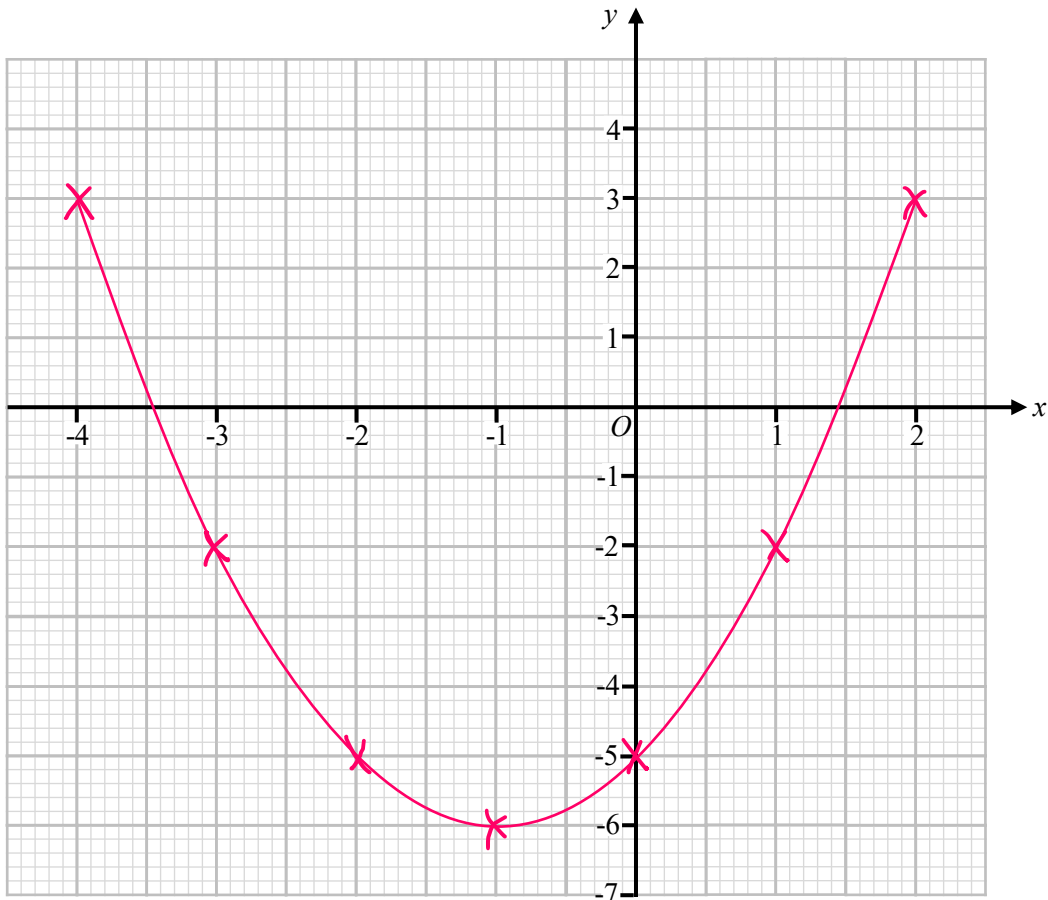
(Total for Question 5 is 4 marks)

6 (a) Complete the table of values for $y = x^2 + 2x - 5$

x	-4	-3	-2	-1	0	1	2
y	3	-2	-5	-6	-5	-2	3

(2)

(b) On the grid, draw the graph of $y = x^2 + 2x - 5$ for values of x from -4 to 2



(2)

(c) Use your graph to estimate the roots of the equation $x^2 + 2x - 5 = 0$

(accept -3.5 / 1.5) → $x = -3.4$ $x = 1.4$

(2)

(Total for Question 6 is 6 marks)

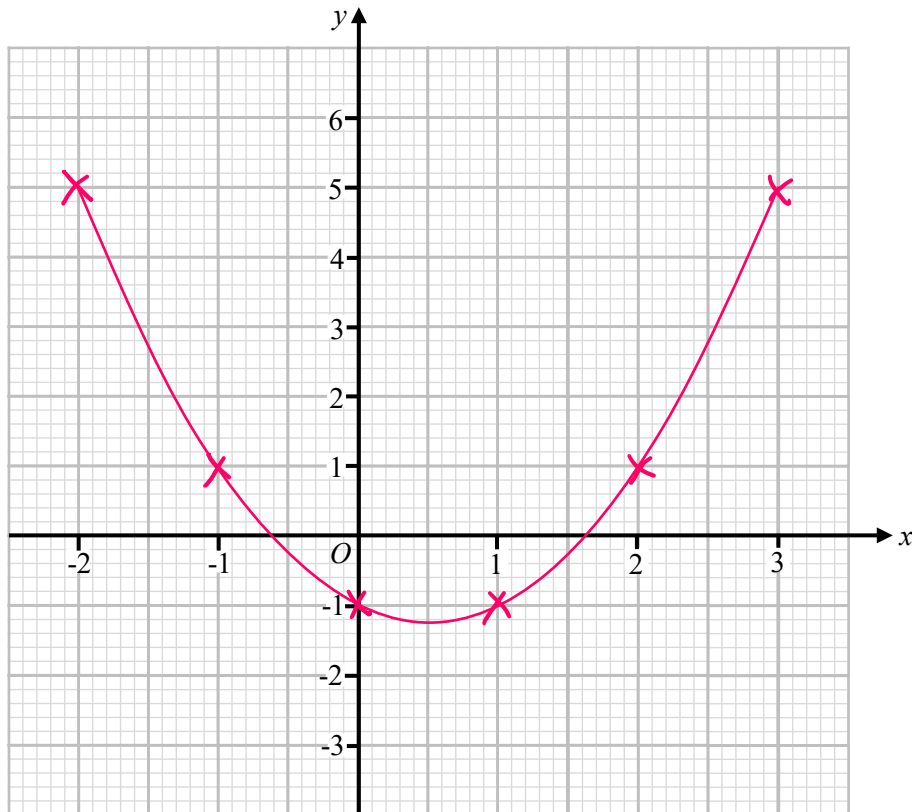


7 (a) Complete the table of values for $y = x^2 - x - 1$

x	-2	-1	0	1	2	3
y	5	1	-1	-1	1	5

(2)

(b) On the grid, draw the graph of $y = x^2 - x - 1$ for values of x from -2 to 3



(2)

(c) Use your graph to estimate the roots of the equation $x^2 - x - 1 = 0$

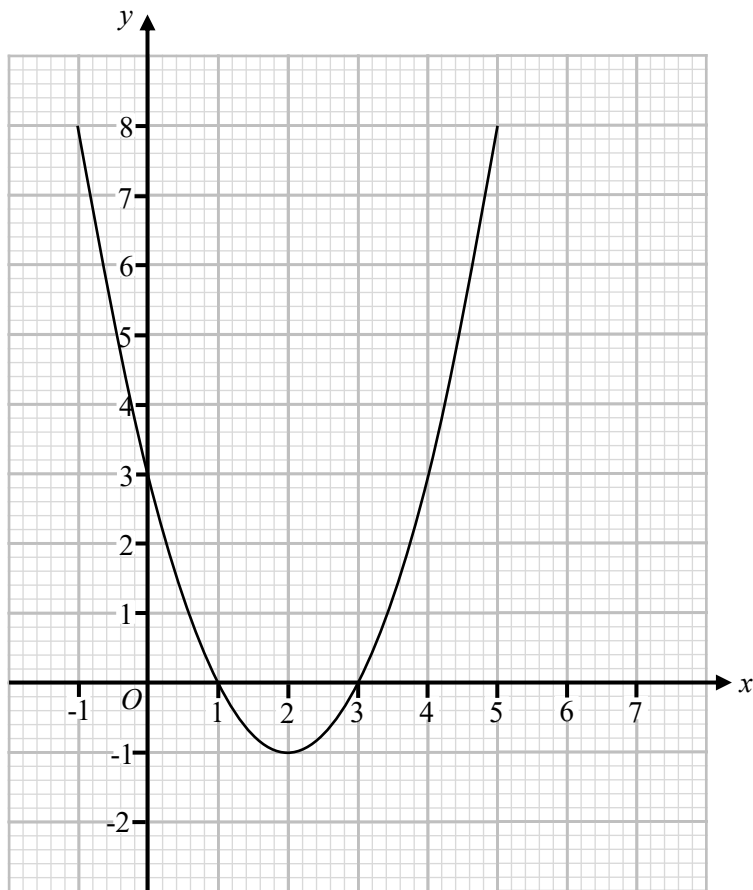
$x = -0.6$ $x = 1.6$

(2)

(Total for Question 7 is 6 marks)



8 Here is the graph of $y = x^2 - 4x + 3$



(a) Use the graph to find the roots of the equation $x^2 - 4x + 3 = 0$

$x = 1$ $x = 3$

 (2)

(b) Write down the coordinates of the turning point of the graph $y = x^2 - 4x + 3$

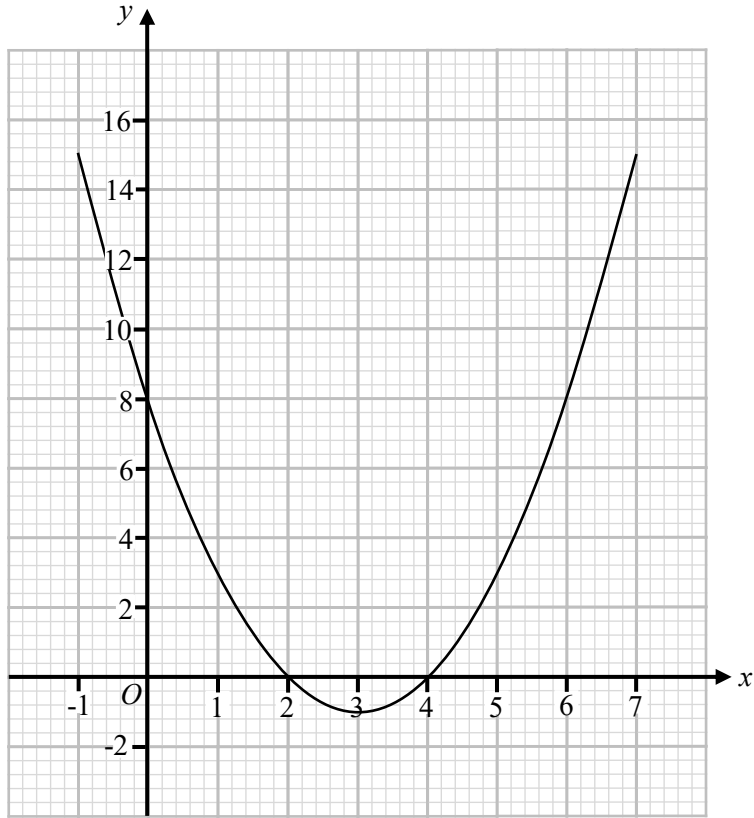
(2 , -1)

 (1)

(Total for Question 8 is 3 marks)



9 Here is the graph of $y = x^2 - 6x + 8$



(a) Use the graph to find the roots of the equation $x^2 - 6x + 8 = 0$

$x = 2$ $x = 4$

 (2)

(b) Write down the coordinates of the turning point of the graph $y = x^2 - 6x + 8$

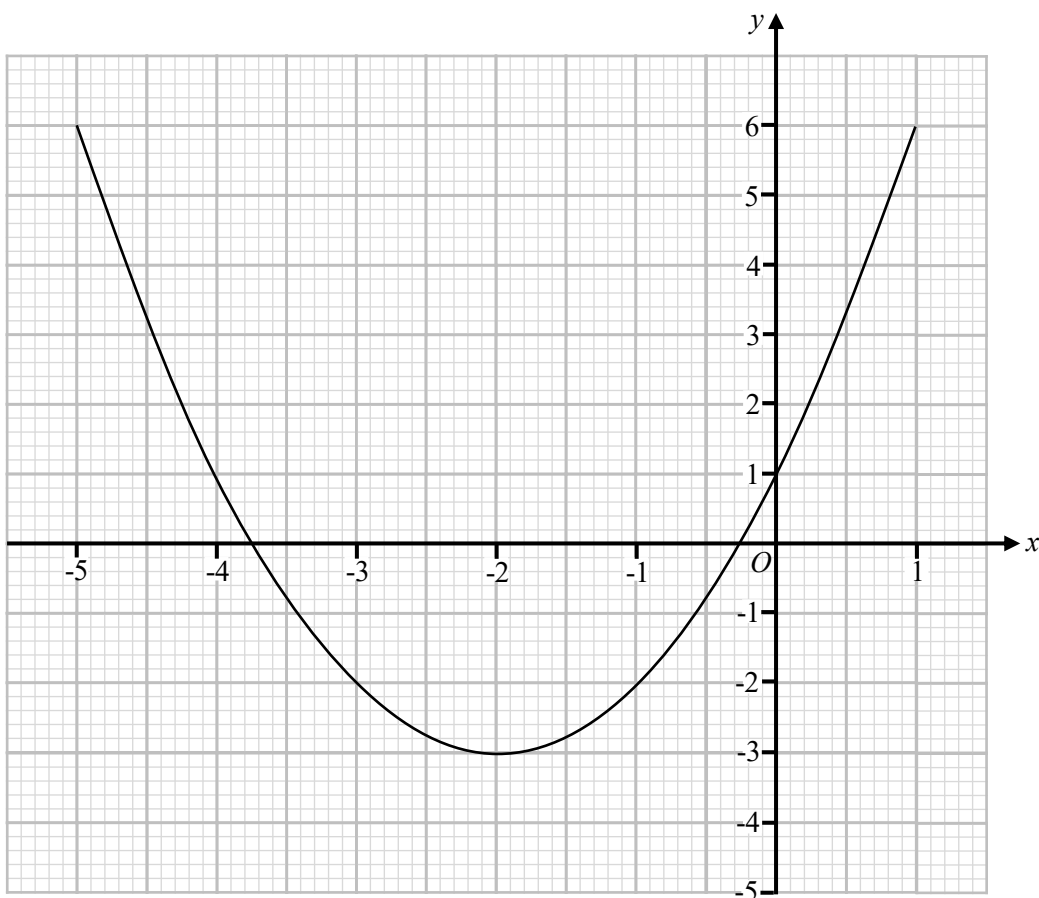
$(3, -1)$

 (1)

(Total for Question 9 is 3 marks)



10 Here is the graph of $y = x^2 + 4x + 1$



(a) Use the graph to find estimates for the roots of the equation $x^2 + 4x + 1 = 0$

$$\underline{x = -0.3 \quad x = -3.7}$$

(2)

(b) Write down the equation of the line of symmetry of the graph $y = x^2 + 4x + 1$

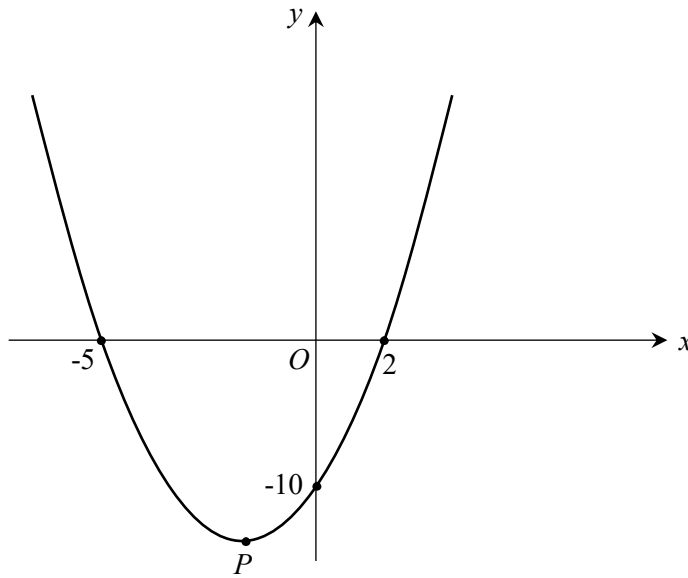
$$\underline{x = -2}$$

(1)

(Total for Question 10 is 3 marks)



11 Here is a sketch of the graph of $y = x^2 + 3x - 10$



(a) Write down the roots of the equation $x^2 + 3x - 10 = 0$

$$\underline{x = -5 \quad x = 2} \quad (1)$$

(b) Write down the y -intercept of the graph of $y = x^2 + 4x + 1$

$$\underline{-10} \quad (1)$$

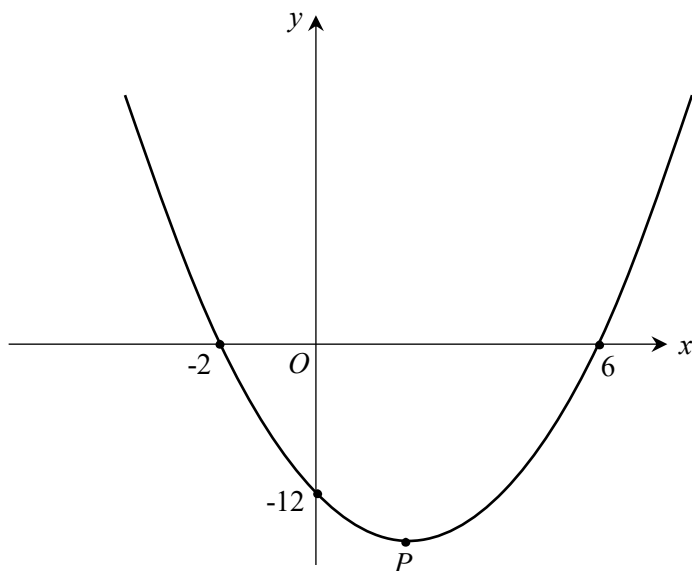
(c) Write down the x -coordinate of P , the turning point of the graph.

$$\underline{-1.5} \quad (1)$$

(Total for Question 11 is 3 marks)



12 Here is a sketch of the graph of $y = x^2 - 4x - 12$



(a) Write down the roots of the equation $x^2 - 4x - 12 = 0$

$$\underline{x = -2 \quad x = 6} \quad (1)$$

(b) Write down the y -intercept of the graph of $y = x^2 - 4x - 12$

$$\underline{-12} \quad (1)$$

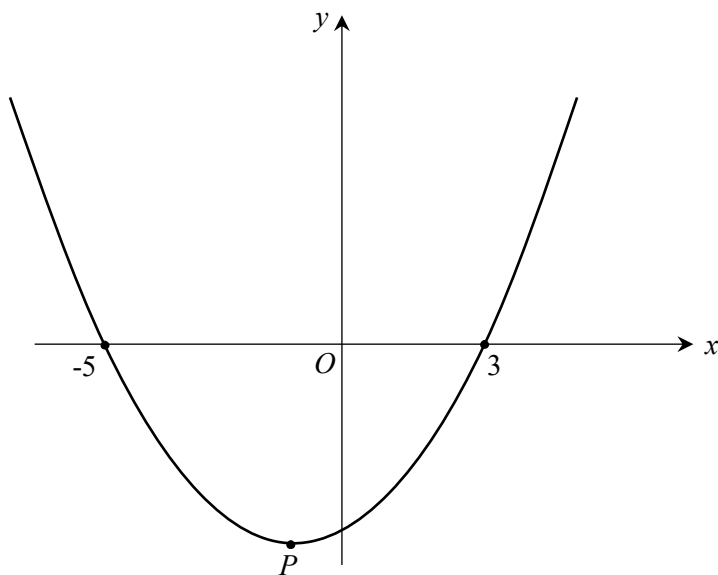
(c) Write down the equation of the line of symmetry of the graph.

$$\underline{x = 2} \quad (1)$$

(Total for Question 12 is 3 marks)



13 Here is a sketch of the graph of $y = x^2 + 2x - 15$



(a) Write down the roots of the equation $x^2 + 2x - 15 = 0$

$$\underline{x = -5 \quad x = 3}$$

(1)

(b) Write down the y -intercept of the graph of $y = x^2 + 2x - 15$

$$\underline{-15}$$

(1)

(c) Work out the coordinates of P , the turning point of the curve.

$$\frac{-5 + 3}{2} = -1 \quad y = (-1)^2 + 2(-1) - 15$$

$$y = 1 - 2 - 15$$

$$\underline{(-1, -16)}$$

(2)

(Total for Question 13 is 4 marks)

